A CASE OF ACUTE POLIOMYELITIS ANTERIOR IN A YOUTH SEVENTEEN YEARS OF AGE.*

By Wharton Sinkler, M.D.

Acute poliomyelitis attacks individuals most frequently between the second and third years, and after the tenth year it is comparatively rare, although it may occur at any period of life, and has been observed as late as sixty-two years. Of 609 cases collected by Starr from tables compiled by Seeligmuller, Galbraith, Gowers, and myself, 118 occurred during the first year of life, 214 in the second year, and 140 in the third. In this table cases were recorded with diminishing frequency up to the tenth year, at which age there were only six cases.

The etiology of the disease has not become any more clear during the past few years than it was when the affection was described by Duchenne as "Acute Atrophic Paralysis." There is now a general conviction among neurologists that poliomyelitis anterior is due to some infectious process, but what the nature of the infection is no one has demonstrated. The fact that several epidemics have occurred in certain localities is undoubted proof of the infectious character of the disease, although it must be said that the general symptoms and course of the affection in the epidemics are slightly different from those in isolated cases. An infectious process would explain, in a certain way, the reason for the fact which I pointed out many years ago that a large majority of cases of poliomyelitis occurred during the hot months of the year, and all of the epidemics of poliomyelitis which have been recorded have occurred during the summer. For example, the epidemic recorded by Caverly, of Rutland, Vt., occurred between the 20th of July and the 20th of September, 1895, and 144 cases, both in children and adults, were reported by him. Nearly all writers on the subject have regarded exposure to cold or sudden checking of perspiration as one of the causes; and in the patient before you this was apparently the occasion of the disease.

The most recent investigations into the pathology of the disease show conclusively that it is primarily a vascular affection, and that the changes in the large multipolar cells of the anterior horns are secondary to vascular disturbance. In the early stage of the disease, when the opportunity for postmortem examination has occurred, the blood vessels are found distended, and some of the capillaries are ruptured, allowing extravasations of blood cells; then follows a localized myelitis in the gray matter of the cord. The regressive character of the paralysis can surely only be explained on the theory of vascular changes, which are only temporary. It is interesting to observe that this view of the pathology of poliomyelitis, which was held many years ago, and was subsequently abandoned, has been re-established. A more comprehensive view as to the nature of the disease has undoubtedly been helpful in regard to the treatment of these cases. Remedies like the salicylates, which are indicated in the infective processes, have proved of great advantage in my hands in recent cases of poliomyelitis. In a child of three years of age, seen by me during the past summer, with paralysis of the left leg, the result of poliomyelitis, almost complete recovery has taken place. The patient was kept at rest for several weeks, and salicylate of sodium and ergot were administered. The case which I will present for your inspection is as follows:

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*Read before the Philadelphia Neurological Society, Dec. 18, 1899. For discussion on this paper see p. 220.

J. N., aged 17 years, of New Egypt, N. J., was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases November 21, 1899. He was a farmer by occupation. His father and mother are living and well, as are five brothers and six sisters. There are no hereditary tendencies to paralysis, and there is no personal history of syphilis. He has always been well and vigorous. He had appendicitis four years ago. He was treated medicinally and was in bed for several days, but recovered completely. He had a fistula in ano, which made its appearance about a year ago, but it was small and never very troublesome.

On or about August 15, 1899, he went swimming in a lake, and remained in the water for at least an hour and a half. The day was cool, and soon after coming out of the water he had a chill, which lasted for a few minutes. He worked the next day, feeling as well as usual, but in three or four days he began to have headache, vertiginous sensations, and felt bad generally. For three or four days he had severe pain in the back and in the hips, and was confined to bed. He then found that there was some loss of power in both legs, from the hips down. This was first observed about one week after the day on which he went in swimming. Muscular weakness was first noticed on attempting to go up stairs, when he found that he could not walk up the steps. The next morning he could stand only with assistance, as the legs would give way from the hips down if he was not supported. The pains had become much less by this time, and there was no trouble with the bladder or rectum. After a few days he was taken out of bed and allowed to go out on the porch. As a result he apparently caught cold, and there was return of the pains in the back and limbs. There was then retention of urine for two days, but he was catheterized only once. There then was found to be paralysis of both legs. The loss of power was complete in the left leg, but in the right leg he had some power of moving the toes; with this exception the right leg was powerless. There was no weakness whatever in the arms. In two or three days he began to recover from the pains, and in a week's time there was return of power in the right leg to a considerable extent.

He was admitted to the Pennsylvania Hospital on September 7, where he remained until November 14, and while there the fistula was operated upon and healed promptly. On admission to the Infirmary for Nervous Diseases, November 21, the patient was able to walk on crutches, supporting his weight on the right leg. He was able to move the toes of the left foot, but could scarcely stir the foot. He could partially flex the leg at the knee, but could not lift the leg so as to raise the heel from the bed. He had power of moving all the muscles of the right leg, although without vigor. The knee-jerks on the right side were present, but on the left side they could not be elicited. There were no changes in sensation, and there was no pronounced atrophy in the muscles of the legs. There was no loss of control of the bladder, and the bowels moved regularly. Examination of the urine gave negative results. Electrical examination was made by Dr. H. P. Boyer, who made the following report:

	Left.			Right.
"12 ma.	K.C.C.; 7 A.C.C.	Rectus femoris.	8 ma.	A.C.C.; 7 K.C.C.
12 ma.	" "	Flexors of thigh.	12 ma.	K.C.C.; 7 A.C.C.
12 ma.	" "	Adductors.	6 ma.	K.C.C.; 7 A.C.C.
7 ma.	K.C.C.=A.C.C.	Anterior tibials.	6 ma.	A.C.C.; 7 K.C.C.
14 ma.	K.C.C.; 7 A.C.C.	Calf group	10 ma.	K.C.C.; 7 A.C.C.
12 ma.	K.C.C.; 7 A.C.C.	Peroneus	9 ma.	K.C.C.; 7 A.C.C.

"The faradic response is lessened in all of the muscles of the legs. The left anterior tibial responds but very slightly to the strongest faradic current. The right anterior tibial responds nearly as well as the other muscles of the legs to faradism. There is R. D. in right rectus femoris and in both anterior tibials."

The patient was kept in bed and massage and galvanism were thoroughly and carefully applied to the legs, and there has been a steady improvement in his condition. He can now move the right leg vigorously, and has power of flexion and extension of the left leg. He can also raise the whole leg without flexing it at the knee, and can flex and extend the toes, but has little more movement of the foot than he had originally. There is distinct wasting of the anterior tibial group of muscles in the left leg and of the quadriceps extensor, but the remaining muscles are so well preserved that there is no difference in the circumference of the two legs.

There are three points of interest in this case: First, the unusual age at which poliomyelitis occurred. Secondly, the fact that, although there was reaction of degeneration in the anterior tibial muscles of the left leg there was still good response to the faradic current, and that, although all of the muscles of the right leg have regained almost the normal amount of strength, there still remains reaction of degeneration in the anterior tibial group. The third point which is notable is, that there is exaggerated knee-jerk in the right leg, whereas two months ago this was entirely absent. I have seen one other case in which after recovery from poliomyelitis there was exaggerated knee-jerk.

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26. NEWSPAPER SCIENCE. Professor James H. Hyslop (Psychological Review, Vol. 7, No. 1, Jan., 1900, p. 64).

This is a note which, in justice to a competent scientific investigator, should be given all convenient publicity. Professor Hyslop disclaims any expectation of "scientifically demonstrating the immortality of the soul" as the newspapers said. Scientific people, as well as the multitude, read the papers, and it is these especially he would ask to suspend their judgment on this interesting matter—what he will have to say "should not be estimated from the standpoint of fakirs and newspapers." "Spiritism must either be accepted or killed—sneering is no longer effective or scientific." "Whether I am right or not I shall leave to others to decide." All that Professor Hyslop seems to ask is a *hearing* at which sensational newspaper ingenuity shall not wholly have the floor. G. V. N. DEARBORN.